

### REMARKS

Claims 1-12 are pending in the application. Applicants amend claims 1 –3, 7 – 9 and 12.

No new matter is introduced

### REJECTION UNDER 35 U.S.C. § 112

Claims 1 – 12 are rejected under the first paragraph of 35 U.S.C. § 112 as containing subject matter that was not described in the specification in a way as to enable one skilled in the art to make or use the invention. Specifically, the Examiner suggests that there is confusion between the description in the specification describing use of Applicants' invention as a transition between IPv4 and IPv6 networks, and Applicants' claimed use as a routing control method between non-hierarchical and hierarchical networks. Applicants amend claims 1 and 7 to distinguish the hierarchical network from the non-hierarchical network by requiring that the hierarchical network "allows hierarchical routing control by which a route is searched for without referring to an entirety of address bits that identify a network". This definition is consistent, for example, with the description provided in Applicants' originally-filed specification at page3, lines 14 – 37.

Applicants respectfully submit that this requirement distinguishes the hierarchical and non-hierarchical networks such that the IPv4 and IPv6 networks described in the specification would be respectively recognized by one skilled in the art as examples of the claimed non-hierarchical and hierarchical networks, and request that the rejection be withdrawn.

### REJECTION UNDER 35 U.S.C. § 103

Claims 1 – 5 and 7 – 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnan in view of "Routing Aspects of IPv6 Transition" (Callon et al.) and "Transition

Mechanisms for IPv6 Hosts and Routers” (Gilligan et al.). Claims 6 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Krishnan in view of Callon, Gilligan and U.S. Patent No. 6,046,999 to Miki et al. Applicants amend claims 1 – 3, 7 – 9 and 12 to further clarify the nature of their invention, and respectfully traverse these rejections.

The Examiner suggests that Krishnan illustrates that conventional IPv4 addressing is hierarchical, containing successive portions identifying lower networks in the network hierarchy (identified as “subnet addressing” at column 5, lines 37 – 53 of Krishnan). The Examiner acknowledges that Krishnan does not disclose assigning and attaching a virtual hierarchy number to a non-hierarchical packet to be relayed to a hierarchical network, and suggests that Callon and Gilligan teach this limitation.

Callon and Gilligan teach an IETF mapping format as illustrated in Applicants’ Fig. 8. In this format, an IPv4-compatible IPv6 address is produced by placing the IPv4 address in the 32 low-order bits of an IPv6 packet, and inserting zeros in each of the 96 high-order bits of the packet. This can be contrasted with the approach disclosed by Applicants (illustrated, for example, in Applicants; FIG. 10), in which the IPv4 address is included in the 64 low-order bits reserved by the packet for the IPv6 interface ID, and a virtual hierarchy number, for example, is included in a 16-bit SLA ID field of the packet.

In this manner, as claimed in Applicants’ amended independent claims 1 and 7, a distinct virtual hierarchy number may be assigned to a portion of the non-hierarchical network that depends on the virtual hierarchy number of a portion of the hierarchical network that is connected to the non-hierarchical portion (i.e., directly indicates that routing is to be performed by a router at the boundary between the two portions). As a result, the IPv6 packet can be routed as claimed in the hierarchical network using hierarchical routing control by which a route is

searched for without referring to the entirety of address bits in the packet. This is further illustrated in the example provided by Applicants' FIG. 9.

In sharp contrast, Applicants respectfully submit that the IETF format disclosed by Callon and Gilligan fails to meet the claimed limitations of Applicants amended claims 1 and 7. The IETF format simply inserts zeros in bit positions of the IPv6 packet not occupied by the IPv4 address, and thereby fails to provide a unique SLA ID that directly indicates a router at a boundary between a portion of the hierarchical network and a portion of the non-hierarchical network.

Accordingly, Applicants respectfully submit that amended independent claims 1 and 7 are not made obvious by any combination of Krishnan, Callon, Gilligan and Miki. As claims 2 – 6 and 8 – 12 respectively depend from allowable claims 1 and 7, Applicants further submit that claims 2 – 6 and 8 – 12 are allowable for at least this reason.

## CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 1 – 12, consisting of independent claims 1 and 7, and the claims dependent therefrom, are in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "TJ Bean", written over a horizontal line.

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**PATENTS**

**TO: Assistant Commissioner for Patents**

Serial/Patent No. 10/075,430

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Inventor(s): Jun Ogawa, Yuki Saito

Title: A Routing Control Method and Apparatus Thereof for a Mixed Environment of a Hierarchical and a Non-Hierarchical

Atty Docket No. FOJI 19.448

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Attorney Thomas J. Bean

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